

Amendments to the specification:

Please add the following new heading and paragraph on page 1, line 1 of the specification:

CROSS REFERENCE TO RELATED APPLICATION

This application claims priority from, and is a divisional of, United States patent application serial number 10/141,582, filed on May 8, 2002 entitled "Tunable Electronic Lens and Prisms Using Inhomogeneous Nano Scale Liquid Crystal."

Please replace three paragraphs starting on page 7, line 8 and ending on page 7, line 22 which starts with "These inhomogeneous droplet" and ending with "inhomogeneous droplets 30, 130, respectively." with the following amended paragraphs:

These inhomogeneous droplet size distributions shown in Figures 1A-1B and 3A-3B, can be easily fabricated by exposing UV light to the LC/monomer mixture through a positive and negative patterned masks, as shown in Figures 6A and 7A-6B which show front views of respective masks 50, 150. In the brighter region, the polymerization rate is faster resulting in a smaller LC droplet. In the weaker UV exposure regions, the droplet sizes are larger.

Referring again to Figures 6A and 7A-6B, the novel photo masks 50, 150 can have a circular shape and can be formed from a glass type material with varying degrees of a reflective coating thereon such as those found in a variable density filter, and the like. For the positive lens photo mask 150 of Fig. 6A, glass opaqueness can increase linearly from the center to the outer side edges. For the negative lens photo mask 50 of Fig. 7A -6B, opaqueness can decrease linearly from the center to the outer edges.

Figures ~~6B-7A~~ and 7B show side views of the novel negative mask 50 and positive mask 150 with ultraviolet(UV) light passing through the masks 50, 150 causing originally uniform droplets(not shown) to turn into inhomogeneous droplets 30, 130, respectively.

Please replace three paragraphs starting on page 8, line 13 and ending on page 8, line 26 which starts with “These inhomogeneous droplet” and ending with “inhomogeneous droplets 30, 130, respectively.” with the following amended paragraph:

Fig. 3A shows a positive liquid crystal lens using the novel inhomogeneous liquid crystal droplet sizes of the invention with a zero voltage applied. Droplets 130 are positioned between glass substrates 110, 120 within ITO layers 112, 122, respectively. Fig. 3B shows the positive liquid crystal lens of Fig. 3A with voltage 135 being applied to ITO layers 122, 132. Referring to Figures 3A-3B the droplet sizes can gradually increase from center areas of the cell to edges of the cell. These inhomogeneous droplet size distributions can be easily fabricated by exposing UV light to the LC/monomer mixture through a patterned mask, as shown in Fig. 6A and ~~7A~~ 6B. In the brighter region, the polymerization rate is faster resulting in a smaller LC droplet. In the weaker UV exposure regions, the droplet sizes are larger. Similar to the embodiment of preceding Figures 1A-1B, these gradient droplet sizes can vary from approximately a few nanometers to micrometers, depending on demands. Thus, they are transparent to white light. As shown in Fig. 4, the refractive index in the middle of the positive lens 100 is higher than the refractive index the outer side edges of the droplets 130.

Please replace the paragraph beginning at page 10, line 25, which starts with “The inhomogeneous droplets” and ending with “described lens and prisms” with the following amended paragraph:

The inhomogeneous droplets of the Fresnel lens can be formed using these respective masks ~~300~~, 400, 500 following similar layouts as that previously described above for forming other previously described lenses and prisms.